

Leadership and Financial Solutions to Climate Change

February 4, 2020

Agenda



01

The business imperative

How are insurers, investors and regulators responding to climate risks and opportunities?

Bill Murphy, KPMG

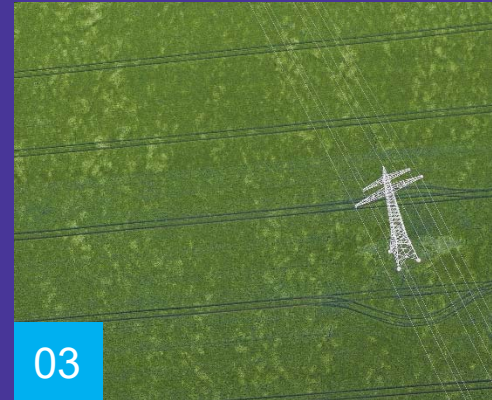


02

The Expert Panel

What is the status of the recommendations of the Expert Panel on Sustainable Finance?

Barbara Zvan, OTPP



03

Investment leadership responses

How are leading asset managers responding to the climate change imperative?

Roger Beauchemin,
Addenda Capital



04

Panel discussion

Q & A





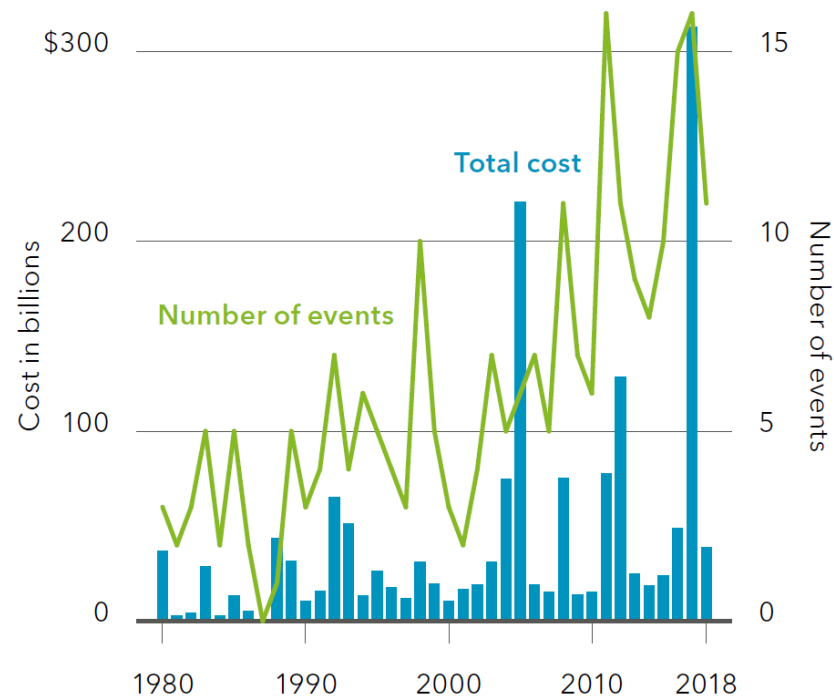
Climate change – the business imperative

Bill Murphy, KPMG

Impacts are already dramatic

....And can be felt abruptly:

Economic losses caused by natural disasters* are trending upwards
U.S. billion-dollar disaster events, 1980–2018

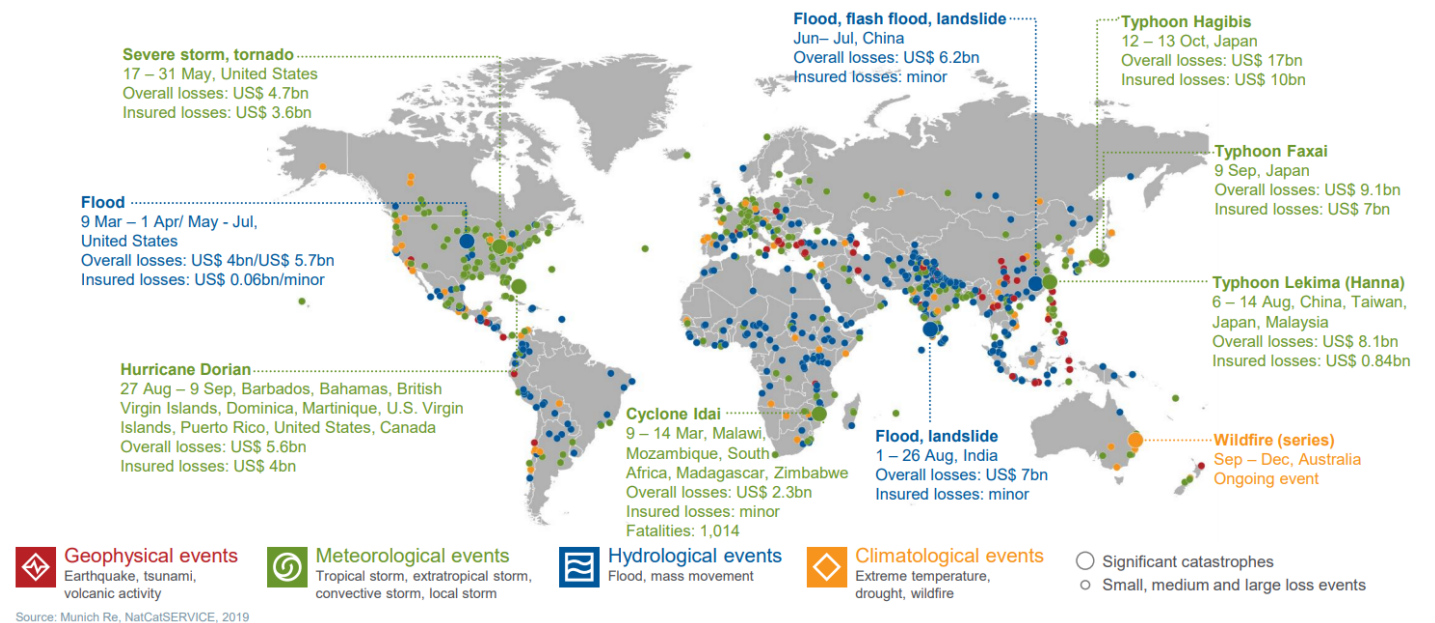


* Tropical cyclones, extreme storms and floods



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In 2019 alone, 820 natural disasters caused overall losses of US\$ 150bn, with insured losses of about US\$ 52bn
Relevant natural disaster loss events worldwide 2019












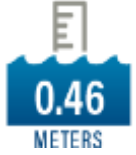


<https://www.blackrock.com/us/individual/literature/whitepaper/bii-physical-climate-risks-april-2019.pdf>
<https://www.munichre.com/en/company/media-relations/media-information-and-corporate-news/media-information/2020/causing-billions-in-losses-dominate-nat-cat-picture-2019.html>
<https://www.munichre.com/en/risks/natural-disasters-losses-are-trending-upwards.html>
<https://shiftmic.com/uploads/files/aon-catas.pdf>

Every degree matters

Generally speaking, an increase of 2°C above pre-industrial levels is considered the **limit or tipping-point**, beyond which changes to climate systems and corresponding impacts are irreversible.

Even **going from just 1.5°C to 2°C** of global warming results in **significantly different potential outcomes** in terms of changes to climate systems and corresponding impacts

Difference between 1.5°C to 2°C of global warming

	1.5°C	2°C	2°C IMPACTS		1.5°C	2°C	2°C IMPACTS
EXTREME HEAT Global population exposed to severe heat at least once every five years			2.6x WORSE	PERMAFROST Amount of Arctic permafrost that will thaw			38% WORSE
SEA-ICE-FREE ARCTIC Number of ice-free summers			10x WORSE	CROP YIELDS Reduction in maize harvests in tropics			2.3x WORSE
SEA LEVEL RISE Amount of sea level rise by 2100			.06M MORE	FISHERIES Decline in marine fisheries			2x WORSE

<https://www.wri.org/blog/2018/10/half-degree-and-world-apart-difference-climate-impacts-between-15-c-and-2-c-warming>

Climate change is recognized as a critical economic risk

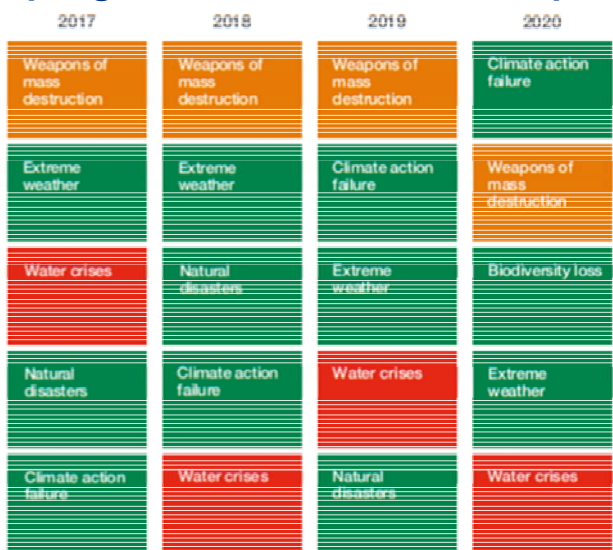
In its Global Risk Report 2020, the World Economic Forum ranks **threats associated with climate change dominate the list** – for the 4rd year in a row. Over a ten-year horizon, extreme weather and climate-change policy failures are seen as the gravest threats.

Top 5 global risks in terms of likelihood



■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological

Top 5 global risks in terms of impact



Climate change is striking harder and more rapidly than many expected

Global Risks Report 2020

<https://www.weforum.org/reports/the-global-risks-report-2020>

The corporate climate change narrative has changed

Today, the focus is very much on the **financial impact of climate-related risks and opportunities on an organization**, rather than the impact of an organization on the environment.



“Companies have traditionally treated sustainability as a peripheral issue, focusing narrowly on the way they manage their impact on the environment. We don’t have the luxury of that limited perspective any more.”

— David Solomon, Goldman Sachs CEO (2019)

<https://www.fsb-tcfd.org/>
<https://www.ft.com/content/ffd794c8-183a-11ea-b869-0971bffa109>

Institutional investors are making bold moves



Larry Fink, BlackRock chairman and CEO

— From: Larry Fink's CEO Letter (January 14, 2020)

BlackRock CEO Larry Fink puts climate change at center of investment strategy

"The evidence on climate risk is compelling investors to reassess core assumptions about modern finance. In the near future – and sooner than most anticipate – **there will be a significant reallocation of capital.**

BlackRock announced a number of initiatives to place sustainability at the center of our investment approach, including: making sustainability integral to portfolio construction and risk management; exiting investments that present a high sustainability-related risk, such as thermal coal producers [...]."

<https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>
<https://www.ft.com/content/ffd794c8-183a-11ea-b869-0971bffa109>



David Solomon, Goldman Sachs CEO

— From: David Solomon's editorial in the Financial Times (December 15, 2019)

Goldman Sachs pledges \$1.1 trillion to fight climate change

"Over the next 10 years, Goldman Sachs will **target \$1.1 trillion** of financing, investing and advisory activity to **nine areas that focus on climate transition** and inclusive growth [...] such as clean energy and transport, sustainable food and agriculture, financial inclusion.

The bank also updated its internal environmental policy framework to rule out providing financing to any new projects that will drill for oil in the Arctic or that create new thermal coal plants or new thermal coal mines."

Climate-related disclosure is gaining momentum

The Recommendations of the FSB **Task Force on Climate-related Financial Disclosures (TCFD)** are rapidly becoming the global standard for disclosures on climate change governance, strategy, risk management and metrics.



“In the future, climate-related disclosure will move into the mainstream, and it is reasonable to expect that more authorities will mandate it”

— Mark Carney, Former Chair of FSB and Governor of the Bank of England

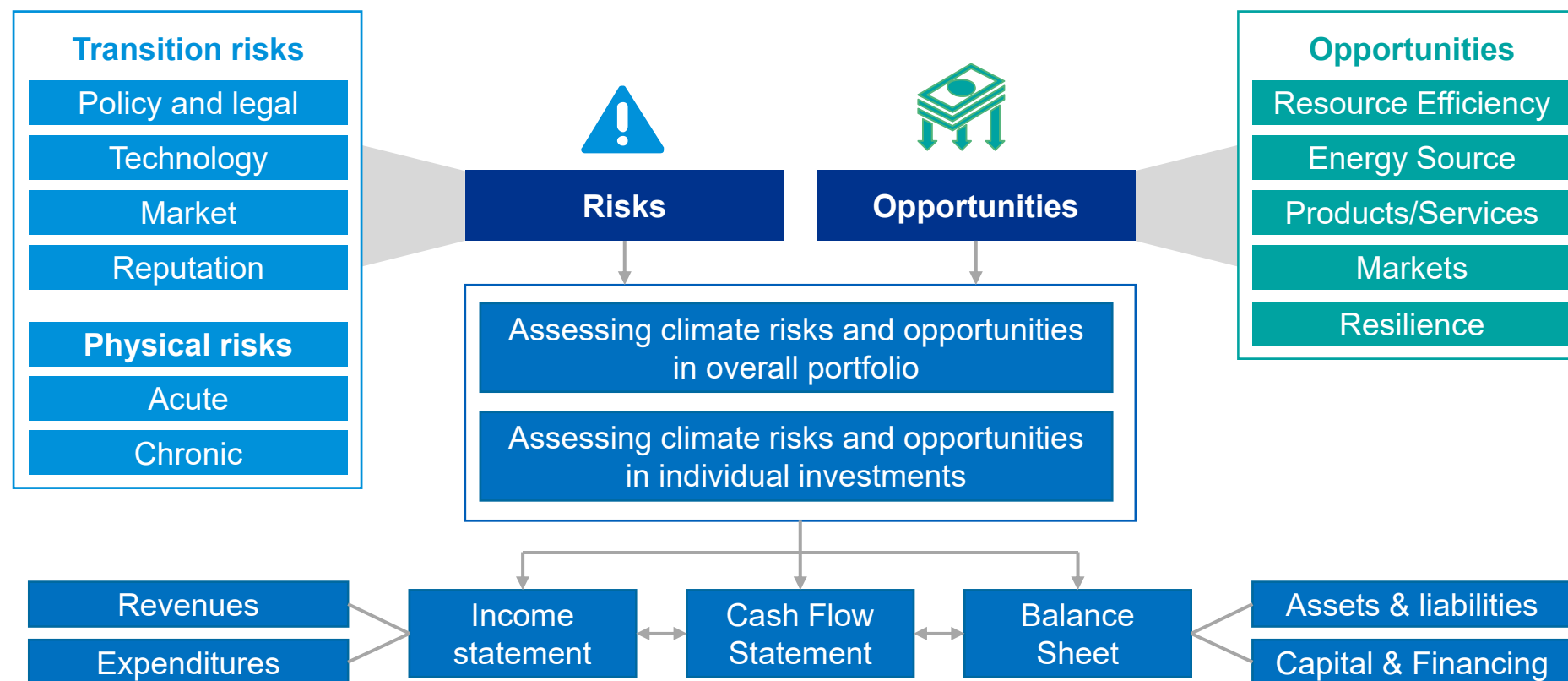
“Increasing transparency makes markets more efficient, and economies more stable and resilient.”

— Michael R. Bloomberg, Chair, TCFD

<https://www.fsb-tcfd.org/>

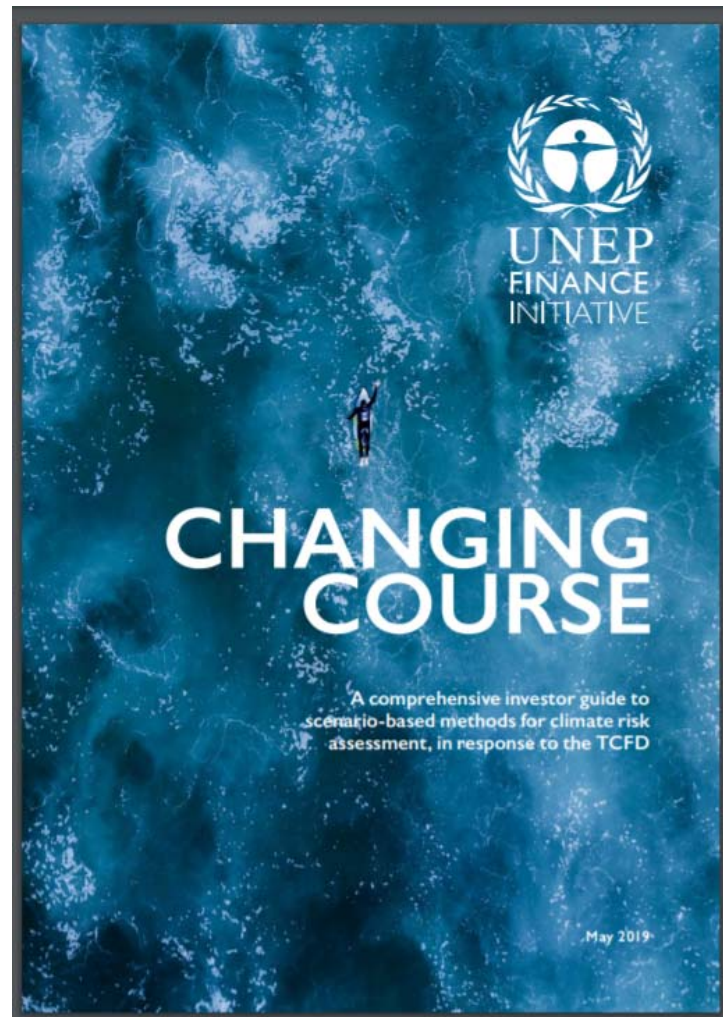
Climate change broadly impacts investment portfolios

Institutional investors are recognizing that physical and transition risks (and opportunities) associated with climate change could have **significant impact on portfolio performance and investment cash flows**, and that these risks (and opportunities) need to be much better understood from a long-term investment perspective.



<https://www.fsb-tcfd.org/>

Scenario analysis advances – UNEP FI investor pilot



<https://www.unepfi.org/publications/investment-publications/changing-course-a-comprehensive-investor-guide-to-scenario-based-methods-for-climate-risk-assessment-in-response-to-the-tcfd/>

**FINANCE
UNEP INITIATIVE**

UN Environment – Finance Initiative is a partnership between UN Environment and the global financial sector created in the wake of the 1992 Earth Summit with a mission to promote sustainable finance. More than 200 financial institutions, including banks, insurers, and investors, work with UN Environment to understand today's environmental, social and governance challenges, why they matter to finance, and how to actively participate in addressing them.

www.unepfi.org

:vivid economics

Vivid Economics is a strategic consultancy providing our private and public clients with deep sectoral and thematic expertise at the nexus of finance, commerce and the environment. For our financial sector clients, we provide policy and market intelligence, scenario modelling, and risk and opportunity assessment tools that support investment strategy, risk management, investee engagement and financial disclosure.

www.vivideconomics.com

CARBON DELTA

Carbon Delta is a climate change data analytics firm that quantifies investment risks for more than 30,000 companies along numerous climate change scenarios. With our Climate Value-at-Risk (CVaR) model we aim to empower financial institutions with the tools necessary to protect assets from the worst effects resulting from climate change and also help identify new, innovative low carbon investment opportunities.

www.carbon-delta.com

UNEP FI pilot insights



NORGES BANK INVESTMENT MANAGEMENT:
SCENARIO ANALYSIS IS A USEFUL
TOOL FOR ASSESSING RISKS

Table 27: Rockefeller portfolio CVaR results comparison

ROCKEFELLER
ASSET MANAGEMENT

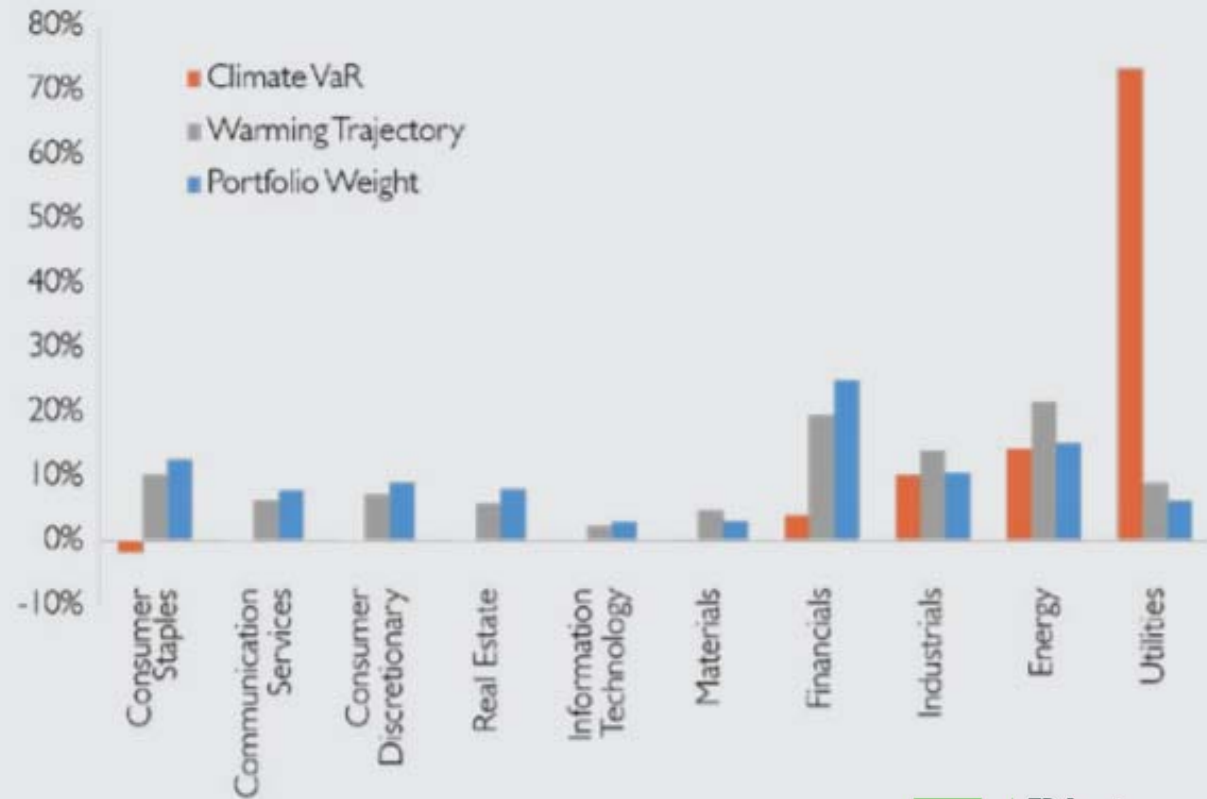
Portfolio name:	Global ESG Fossil Fuel Free Equity Strategy	Global ESG Equity Strategy	Global Equity Strategy
Portfolio VaR:	-1.1%	-1.4%	-2.6%

Source: Rockefeller; Carbon Delta



ADDENDA CAPITAL: THE REAL BENEFITS
OF SCENARIO ANALYSIS AND DISCLOSURE
COME FROM THE PROCESS ITSELF

Figure 34: TDAM CVaR, warming trajectory and weights by sector – Canadian Equity portfolio



Source: TDAM, Carbon Delta



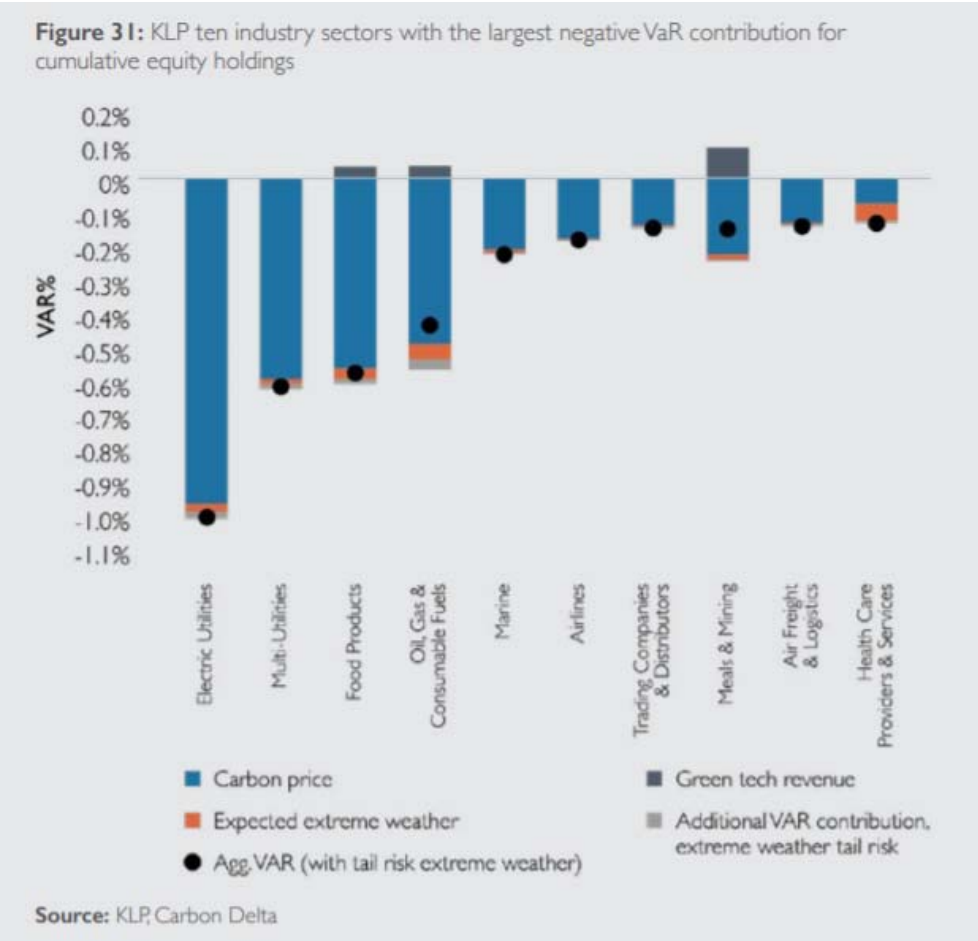
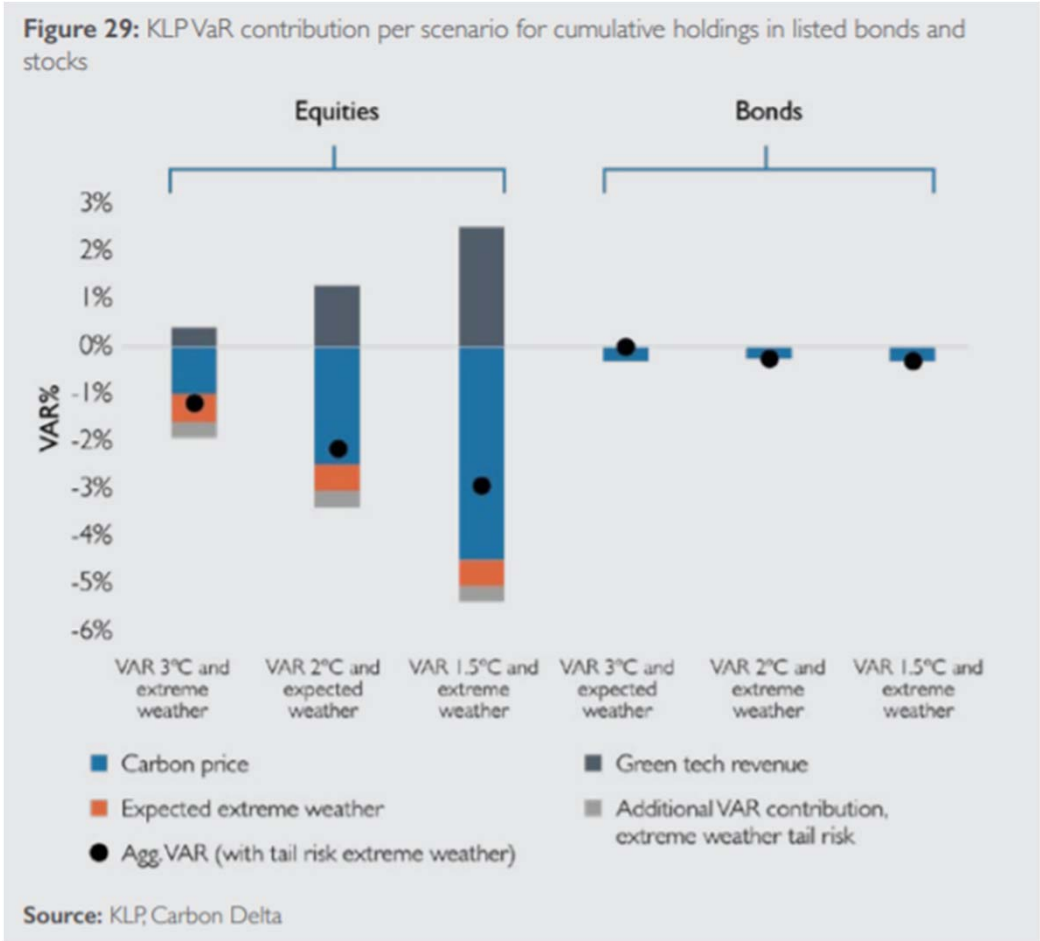
TD Asset
Management



<https://www.unepfi.org/publications/investment-publications/changing-course-a-comprehensive-investor-guide-to-scenario-based-methods-for-climate-risk-assessment-in-response-to-the-tcfd/>

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UNEP FI pilot insights (cont'd)



<https://www.unepfi.org/publications/investment-publications/changing-course-a-comprehensive-investor-guide-to-scenario-based-methods-for-climate-risk-assessment-in-response-to-the-tcfd/>

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Strong industry and regulatory responses are occurring



The Expert Panel

Barbara Zvan, Ontario Teachers Pension Plan

Investment leadership responses

Roger Beauchemin, Addenda Capital

Panel discussion – Q & A